

**REMARKS**

Claims 1-20 are all the claims pending in the application.

**Claim Rejections - 35 U.S.C. § 112, second paragraph:**

Claims 6-8 stand rejected under 35 U.S.C. § 112, second paragraph, the Examiner stating that the term "highly rigid" is a relative term and does not clearly define the present invention. The Examiner states that she is unclear as to exactly how rigid the suction cups are or their relative rigidity compared to less rigid cups. Applicants have amended claims 6-8 herein to refer to the suction cups as "first" and "second" suction cups wherein the relationship of the rigidity of the respective skirt portions of the first and second suction cups are thought to be more clearly defined.

The Examiner also rejects claims 7 and 8 based on the term "respective." Applicants have removed the term "respective." Applicants respectfully submit that the above-discussed amendments do not limit the claim scope in any manner.

**35 U.S.C. § 102 Rejections:**

Claims 1-5 and 9-13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by JP 62-215441. Applicants respectfully traverse this rejection. The present invention relates to a sheet-sucking device which uses, *inter alia*, a suction cup operation device that can independently displace a suction cup among a group of suction cups as a sheet is being lifted from a cassette by the suction cups. As a result, the lifted sheet becomes curved which causes separation from a sheet below. In particular, this feature is recited in claim 1 as:

“a suction cup operation device which can displace at least one suction cup among the plurality of suction cups over a predetermined stroke in a suction cup axial direction

independently of others of the suction cups, and which, at a point in time when the sheet is sucked by the plurality of suction cups and raised up by a predetermined amount, displaces the at least one suction cup so as to cause the sucked sheet to curve wavily along the transverse direction.”

JP ‘441 is also related to a sheet-sucking device that uses a plurality of suction cups to lift a sheet (see Figures 4(a)-4(d)). The Examiner refers to these Figures, and, as they relate to alleging a suction cup operation device, states that the suction cup operation device comprises actuators connected to the respective suction cups, the suction cup operation device displaces the suction cups by simultaneously driving at least every other one of the actuators, wherein every other one comprises a group of actuators.

In the ‘441 patent, however, the suction cups themselves are not displaced independently of the others. Further, there is no teaching that the sheet is raised up by a predetermined amount and then one of the suction cups is displaced.

Rather, in the JP ‘441 device, the fixing phase of each cam 54 is differentiated. That is, as shown in Figures 4(a) and 4(b), the cams 54 are oriented so that one cam 54c lifts tubular member 64c with suction cup 66c before the other cams so that the sheet becomes “wavy”. This does not suggest displacing the suction cups themselves, but is a mechanical way based on cam structure to make a sheet “wavy” As such, Applicants submit that claim 1 is allowable at least on this basis.

With respect to claims 2 and 3, Applicants submit that JP ‘441 does not disclose the feature of actuators connected independently to the respective suction cups. While a vacuum

suction mechanism is disclosed, there is no teaching, in view of the mechanical cam structure disclosed in JP '441, why each suction cup would be independently actuated for release.

For claims 4 and 5, Applicants respectfully submit that JP '441 does not disclose making at least every other one of the cams engage. Rather, as shown in the Figures, all cams engage at the same time.

Claims 9-13 are allowable at least based on their dependence on claim 1.

**35 U.S.C. § 103(a) Rejections:**

Claims 8 and 14-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '441. The Examiner acknowledges that JP '441 does not explicitly teach a method of sucking and feeding a sheet, but argues that it would have been obvious to perform the method steps of claims 14-17 when using the apparatus taught by the '441 patent in its usual and expected fashion.

With respect to claim 8, again, Applicants respectfully submit, as discussed above, that JP '441 does not teach pressure being reduced or changed for individual suction cups. Also, as discussed, the raising of the sheet by a predetermined amount is not disclosed.

With respect to claim 14, Applicants submit that there is no disclosure in JP '411 with regards to "raising the sheet by a predetermined amount" before curving the sheet. As understood from Figure 4(b), this feature would not be suggested because there is no separation of the sheet (e.g., at suction cups 66a, 66b, 66d, and 66e) before the sheet is made curvy/wavy.

For claim 17, as noted, Applicants submit that JP '441 does not disclose or suggest making at least every other one of the cams engage. Rather, all cams engage as shown in the Figures.

Claims 15 and 16 are allowable at least based on their dependence on claim 14.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '441 in view of Dachtler (U.S. Patent No. 6,886,827). The Examiner acknowledges that the '441 patent does not teach suction cups of different rigidity which are subjected to different levels of pressure at different times. However, the Examiner argues that Dachtler does teach this feature (citing columns 4 and 5) and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the highly-rigid and less-rigid suction cups and the pressure changer of Dachtler with the device of the '441 patent if one wanted to be able to ensure separation of the top most plate from the stack.

Applicants respectfully traverse this rejection. First, as discussed above, there is no disclosure of providing different suction pressures to the suction cups of the JP '441 device. Rather, the separation of the sheet is done by other mechanical means including the cam structure disclosed in Figures 4(a)-4(d). Next, Dachtler also does not disclose use of suction cups of different rigidity. The suction cups are lifter holders 5, and there is no disclosure of changing pressure for these cups or discussion of their rigidity. The Examiner's reference to columns 4 and 5 discuss edge separation holders 7a and 7b and not the lifter holders 5. Accordingly, Applicants respectfully submit that the features of these claims are not disclosed by either reference.

Claims 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '441 in view of Dachtler. The Examiner acknowledges that neither the '441 patent nor Dachtler explicitly teach a method of sucking and feeding a sheet, but argues that it would have been obvious to perform the method steps of claims 18-20 when using the apparatus taught by the

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U.S. Application No. 10/727,622

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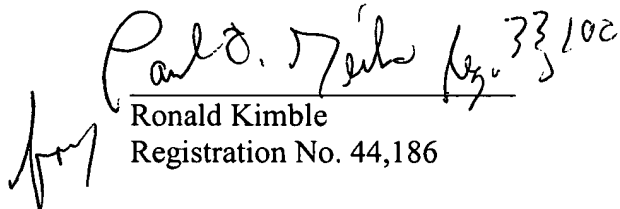
combination of the '441 patent and Dachtler in its usual and expected fashion. With respect to claims 18 and 20, as discussed above, neither reference discusses suction cups of differing rigidity.

Claim 19 is allowable at least based on its dependence on claim 14.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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